

REMARKS

Citations to Applicant's specification herein are made with reference to the application as published in the PCT WO 2005/077151 A1.

Drawings

The Action requests new drawings "due to poor legibility and clarity of the drawings." Accordingly, submitted herewith are new clean copies of the drawings. The new copies conform to the previously presented drawings except as noted below.

The Action objects to the drawings asserting that the feature "the radius of the rotor varies round the circumference" is not shown. With respect, Figs. 2A-2B show that the corners of the polygon are located at different distances from the center of the polygon, i.e., that the radius of the rotor varies around the circumference thereof. However, in order to address the concern, the radius R has been added to Fig. 2A. In addition, the axis of rotation of the rotor 20 has been labeled as "A".

The Action objects to the drawings asserting that the feature "the polygon shape is irregular" is not shown. With respect, Figs. 2A-2B show that the corners of the polygon are located at different distances from the center of the polygon, which necessarily means that the polygon is irregular. Further, the text of the specification indicates that the shape shown in Fig. 2A-2B is irregular. See, page 5, line 32-34 ("Figure 2A shows a cross section of the rotor 20 and Figure 2B shows the rotor 20 fitted with teeth." ... The irregular shape of the rotor results..." In view of this, Applicant submits that this feature is shown in the drawings.

The Action objects to the drawings asserting that the feature "the slots are arranged in diametrically opposed pairs" is not shown. With respect, Fig. 2A shows that the slots are arranged in the claimed fashion. In view of this, Applicant submits that this feature is shown in the drawings.

The Action objects to the drawings asserting that the feature "wherein at least one slot is angled away from the axis of rotation of the rotor" is not shown. Figs. 2A and 2B have been amended to show that the lowermost slot (in the figures) is angled away from the axis of rotation of the rotor. This change merely brings the drawings into conformance with the specification (see the paragraph beginning on page 4, line 31). In view of this, Applicant submits that this feature is now shown in the drawings.

The Action objects to the drawings asserting that the feature "each successive slot in each series having an increased distance from the axis in the direction in which the rotor rotates" is not shown. Applicant submits that Fig. 2A shows this feature. For example, starting at the slot located at the 4:30 position, and moving counter-clockwise, the slot at 3:00 is slightly farther away from axis of rotation A, the slot at 1:30 is even farther away, and the slot at the 12:00 position is farthest away. A similar arrangement is present for the series of slots at 10:30, 9:00, 7:30, and 6:00 positions. In view of this, Applicant submits that this feature is shown in the drawings, including at least Fig. 2A.

§112 Rejections

Claims 1-16 stand rejected under §112, ¶2 for use of the term "its" and for use of the term "for in use." Claims 1 and 4 have been amended to clarify the claim language without narrowing the scope thereof. Applicant also notes that claim 1, prior to amendment, did not contain the word "its," contrary to the Action.

With regard to claim 3, this claim has been amended to clearly call out a structural limitation of the tooth without including the rotor or any part thereof, without narrowing the scope thereof.

In view of these amendments, Applicant requests withdrawal of the §112 rejections.

Allowable Claims

Claims 6-15 were indicated as allowable. As such, Applicant has amended claim 6 to be in independent form including all the limitations of the corresponding base claim, but further amended to address the §112 issues identified by the Examiner. As such, these claims are believed to be in condition for allowance.

§102 Rejections

Claims 1, 4, and 16 stand rejected under §102 over Sun. Claim 1 further stands rejected under §102 over Hollien, and claims 1-2, 4 stand rejected under §102 over Leguin.

Regarding claim 1 and Sun, Applicant notes that claim 1 requires, *inter alia*, that the main body comprise a slot, specifically "two substantially planar surfaces disposed so as to face in generally opposite directions." The Sun tooth depicted in the Action does not appear to include two substantially planar surfaces that face in generally opposite directions. Surfaces 21 and 23 may be considered as being substantially planar, but they point in what appear to be orthogonal directions, not generally opposite directions. As such, Sun does not disclose a tooth that meets each and every claimed limitation. Accordingly, Applicant submits the independent claim 1, and its dependent claims, define patentable subject matter over Sun.

Regarding claim 1 and Hollien, Applicant notes that claim 1 requires, *inter alia*, that the cutting face include "at least two cutting tips which are oriented generally perpendicular to each other such that they cut in orthogonal directions simultaneously when said tooth is rotated about an axis spaced from said tooth." Applicant appreciates that the Examiner has identified the putative "tips" in Hollien. However, the two tips are not a portion of the cutting face, and therefore cannot be considered as cutting tips. Instead, the identified portions of the Hollien device are portions that do not cut. As is known in the art, a router bits cut on their sides and have blunt ends. That is, with reference to Figs. 2-5 of Hollien, the downward-most face of the

Hollien router bit (defined by sleeve 28) is not sharp and does not include any cutting edge. And, the blade 16 does not extend downward beyond the sleeve 28 (see Fig. 4). Thus, the identified portions of Hollien simply cannot be the claimed cutting tips. Further, even assuming *arguendo* that the Hollien blade 16 somehow has the two claimed cutting teeth, the Hollien cutting blade is specifically designed to cut when rotated about the longitudinal axis of the shank 10, and this axis runs through the blade 16 and is not spaced therefrom. As such, Hollien does not disclose a tooth that meets each and every claimed limitation. Accordingly, Applicant submits the independent claim 1, and its dependent claims, define patentable subject matter over Hollien.

Regarding claim 1 and Leguin, Applicant notes that claim 1 requires, *inter alia*, that the slot be formed by "two substantially planar surfaces" that "face in generally opposite directions," and that the cutting face include "at least two cutting tips which are oriented generally perpendicular to each other such that they cut in orthogonal directions simultaneously when said tooth is rotated about an axis spaced from said tooth." The Action points to the Leguin structure of Fig. 1C as allegedly showing this structure. Applicant respectfully submits that the structure in Fig. 1C of Leguin does not make the necessary teachings.

The item referred to by the Action and shown in Fig. 1C of Leguin is Leguin's anvil, not Leguin's tooth. See, e.g., col. 5, lines 29-42 describing Fig. 1C as the anvil 22. And, as pointed out in Fig. 11, the Leguin anvils (now referenced as 74,76) are mounted to a stationary structure and do not rotate with the disc 71 during use. Col. 7, lines 48-49; col. 7, lines 56-58. Thus, the Leguin anvil 22 does not rotate about anything, much less rotate about an axis spaced from the anvil. Further, the Leguin anvil 22 of Fig. 1C is shown with four sets of teeth and slots. Only one set of teeth and slots is used at any one time. The four sets are provided so that should a set of teeth become worn or broken the anvil can be rotated and reinstalled with a fresh set of teeth presented to the drum (col. 5, lines 29-42). Therefore, even assuming that the

Leguin anvil 22 has a plurality of cutting tips, the Leguin cutting tips are not orientated generally perpendicular to each other such that they cut in orthogonal directions simultaneously. Instead, the Leguin cutting tips that are used at any particular time all face in the same direction and therefore cannot cut in orthogonal directions. Indeed, in use, three out of the four sets of teeth are not actually cutting. Accordingly, Applicant submits the independent claim 1, and its dependent claims, define patentable subject matter over Leguin.

Regarding claim 4 and Sun, Applicant notes that claim 4 requires, *inter alia*, that the tooth main body comprise "two substantially planar surfaces disposed so as to face in generally opposite directions." As pointed out above, the Sun tooth does not appear to include any such substantially planar surfaces disposed so as to face in generally opposite directions. Accordingly, Applicant submits the independent claim 4, and its dependent claims, define patentable subject matter over Sun.

Regarding claim 4 and Leguin, Applicant notes that claim 4 requires, *inter alia*, that the tooth being "disposed partially in a corresponding slot in said rotor." The structure shown in Fig. 1C reproduced in the Action is identified in Leguin as an "anvil" not as a "hammer." Col. 4, lines 16-18. As shown in Fig. 11 of Leguin, the "hammers" 72 are attached to a rotor (disc 71), but the "anvils" 74,76 are fixed in position and are not mounted to the rotor. Thus, the Leguin device shown in the Action is not attached to the rotor, much less "disposed partially in a corresponding slot in said rotor." Accordingly, Applicant submits the independent claim 4, and its dependent claims, define patentable subject matter over Leguin.

§103 Rejections

Claim 5 stands rejected under §103 over Sun in view of Leguin. Claim 5 requires, *inter alia*, that "the radius of the rotor varies around the circumference." The usefulness of such an arrangement, and its criticality to some embodiments, is discussed in at page 4, lines 22-30 and

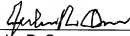
in the paragraph bridging pages 5-6 of the specification. While Applicant agrees that selecting a single optimal radius of a rotor may be a mere matter of design choice, none of the cited art appears to suggest having a rotor that has a different radii at different points along its circumference, as claimed. Applicant notes that the Examiner states that "Applicant has failed to positively recite any criticality," however, Applicant is not required by any law or regulation to positively cite any criticality in the claim itself for a structural limitation. Instead, it is enough if the structural limitations define over the cited art. Here, the concept of a rotor with a circumferentially-varying radius 1) is not shown or suggested in the cited art, and 2) has a utility for some embodiments as identified in the specification. In short, neither Sun, nor Leguin, nor their combination, shows the claimed configuration, and the claimed configuration is much more than a result of mere design choices. Accordingly, Applicant submits the dependent claim 5 defined patentable subject matter over Sun in view of Leguin.

New Claims 17-18

Claims 17-18 have been added, depending from independent claim 1. These claims are supported by at least Figs. 3A-B, 8-9 and the accompanying text of the application. These claims are believed patentable for at least the reasons discussed above with respect to independent claim 1.

For the forgoing reasons, Applicant submits that the present application is in condition for allowance and notice to such effect is respectfully requested. However, if any additional issues remain, the Examiner is encouraged to telephone the undersigned so that they may be expeditiously resolved.

Respectfully submitted,
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